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History in Bite-Sized Chunks

exarc.net/podcast/history-bite-sized-chunks

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Guests
Maeve L'Estrange (IE) and Farrell Monaco (US)
Introduction
In this episode of **The EXARC Show** our host Matilda Siebrecht moderates a discussion about the bitter challenges and tasty triumphs of the archaeology of food – specifically bread – in different archaeological contexts. Tune in for a discussion which touches on the variable nature of the archaeological and historical record, class divisions in food consumption, the practice and practicalities of doing experimental archaeology, as well as the sensorial benefits of this approach. As always, **#FinallyFriday** starts with a conversation between our guests and wraps up with questions from participants in the EXARC Discord.

Transcript
Matilda: Hello and welcome to Finally Friday! This chat session is run by EXARC, the society for archaeological open-air museums, experimental archaeology, ancient technology and interpretation. My name is Matilda Siebrecht and today I am joined by two specialists focusing on the archaeology of food. Maeve L'Estrange (https://exarc.net/members/ind/maeve-lestrange) is a PhD candidate at University College Dublin investigating food, culture, and identity in medieval Ireland from the 13th to 16th centuries, focusing especially on the culinary aspect of breadmaking. She also writes a regular column for the Dublin Enquirer describing how to cook a variety of medieval dishes.
Farrell Monaco (https://exarc.net/members/ind/farrell-monaco) is an MA candidate at the University of Leicester whose research centres on foodways, food preparation, food technologies, bread and bakeries – but in this case in the Roman Mediterranean. She publishes recipes and food archaeology articles on her blog Tavola Mediterranea, which won Saveur Magazine's Best Special Interest Food Blog award in 2019. Farrell also holds regular presentations and workshops in

museum, educational, and private settings, focusing on cooking in the Greco-Roman world. Welcome to both of you as a start. So bread is apparently of interest. Why bread in particular?

Maeve: Well certainly for me, I think of bread as being a staple in my times, in medieval times and well before that. The potato hadn't arrived in Ireland and bread was really the daily carbohydrate. It was eaten at most meals. What do you think, Farrell?

Farrell: For me, it's wonderful to actually look at the role of bread in Roman culture. What I like about it is that it isn't just a lump on the counter like it is nowadays. It wasn't something that was neglected or taken for granted, for that matter. My studies of bread involve the form, the function, the symbolism, and the sustenance. Bread in the Roman world overlapped between the ritual, the domestic, the commercial. So, for me it's something that is quite complex and quite beautiful. It's represented very beautifully in the archaeological record, in the pictorial record, in the written word as well. It was a huge, huge part of Roman daily life so it tells us a lot more about ancient Rome – much more than just what they ate.

Maeve: You're very, very lucky to have all that information. Here in Ireland we have one piece of bread, a tiny, tiny piece of bread that was about 8th or 9th century. That's the only archaeological evidence of bread we have.

Farrell: And was it leavened Maeve, or unleavened?

Maeve: No, it wasn't leavened. It was- we think it was probably an oatcake made with ground oats, oatflour or meal, and perhaps whey. You know, the byproduct of curds and whey, when you separate the curds from the whey. That's the only piece of evidence we have archaeologically. We have no manuscripts either, we have no mentions of bread, really, apart from in some accounts. I look at primary documents and bread is mentioned but nothing at all like you mentioned. Absolutely no picture of bread at all.

Farrell: You're doing some serious detective work, then. The one piece of bread evidence that was found in Ireland, what type of context was it found in?

Maeve: It was found in County Cork. An archaeologist called Mike Mick Monk, he did a dig there and they found it. It was in the context of a settlement and it just caused huge excitement when somebody found a piece of bread because it's organic, it just doesn't last in the kind of soils we have here.

Farrell: Yeah, indeed. That's wonderful. I used to live in Cork so that makes me very proud.

Maeve: Oh, I used to live in Cork too.

Farrell: Maybe Cork is what did this to us, maybe Cork is what gave us the bread obsession!

Matilda: Irish bread is the background. So, you talk about settlements, Farrell what kind of contexts do you find your stuff in usually? Is it in everywhere?

Farrell: The bread samples that I've actually studied are the ones from Pompeii and as far as I know those are the only two contexts where bread remains have been found. Given the nature of their preservation at Pompeii, all of the specimens are carbonized. So I am piecing together evidence from looking at physical evidence from Pompeii, looking at how the bread was written about both in documentary and literary sources, and then looking at the pictorial representations of them to study their form, how they were represented in frescoes, how they were embellished in frescoes in order to interpret which breads fit into which classes. Who made the breads? What the breads meant

symbolically. Which breads overlapped between the ritual and the commercial or the domestic. To me – I don't know, my husband thinks it's a sickness but I think it's endlessly fascinating. It's what I think about when I go to bed, it's what I think about when I get up. I'll be doing a particular type of research on something and then I'll always find myself going back to it because bread was so prominent in Rome. Current scholarly estimates think that grain made up 70% of the daily caloric content of the diet, so bread was hugely important. We know this as well from looking at the actual bakery structures that were all over the Roman Mediterranean: Pompeii, Sicily, Ostia, et cetera. It was a large part of the daily life, a large part of the economy and again it gives us a lot of information about Romans themselves.

Maeve: One of the ways that I know we ate bread, and it's what I'm working off is evidence for bread ovens, open air bread ovens that were found through archaeological digs/excavations. We're pretty sure they're hemispherical clay domed ovens –communal ovens- that people would have baked breads in. I'm actually building one in our Centre for Experimental Archaeology and Material Culture in my University, in University College Dublin, to test what it could be used for, its capacity, and what else it could have been used for when it was cooling down. I don't believe it would have been just used for bread and then just forgotten about. So I'm starting from the very beginning. You're very lucky that you have so much to go on.

Farrell: That sounds absolutely fascinating, and I think the type of people that we are, experimental and creative. In order to break things apart to understand them and put them back together or to understand the technology I think what you're doing is brilliant. It's kind of what's happening on my property as well. I try to involve myself in all of the processes in order to understand breadmaking. Unfortunately, I can't readily replicate a Roman mill, for example, because the materials have to be sourced and it's difficult to make. But we have an oven in the back yard that I use as well to try to do the baking in the same fashion. But I think that reconstructing the technologies is definitely the best route to understanding the labour that was involved, the time that was involved, et cetera. So kudos to you.

Maeve: Well, thank you - I just have a fascination for them because archaeologists, when they're digging, when they're doing excavations, they'll come across kilns and things. I just became really interested in the idea that there were bread ovens out there. We have little clusters of them in the country and they seemed to have come into Ireland around the time the Anglo-Normans came to Ireland at the end of the 12th century. I'm trying to see whether it was a direct influence from Anglo-Normans or whether Gaelic Irish had the time, even though they shouldn't. I mean, once somebody's here, one generation, they shouldn't be called an Anglo-Norman. Everybody was Irish. But I'd like to know who built them. I can tell you one thing: it's very time consuming. It takes a lot of energy and a lot of strength because internally they're about 1.3 metres and so then the dome has to match that of course. I'm not quite finished building it, I'm almost finished. Unfortunately with this lockdown I had to stop doing it.

Farrell: You're fortunate in that you can build it at the Centre and off of your property. In my case, I end up building contraptions in the back yard and my husband always comes out and says "What are you doing? What are you doing now?" He'll catch me trying to dig a pit oven in the lawn and tell me "Put that back! Put the turf back!" So you're fortunate that you've got a dedicated space to do it in. You mentioned earlier that the evidence for the actual hemispherical, or the domed ovens came about around which period? Around 1100?

Maeve: I'm looking at them from around 1200 to 1500.

Farrell: So prior to that, do you think that the Irish made flatbreads using hearths on the ashes, or do you think that they used grilles?

Maeve: I do, I really believe that they had other ways of making breads. One of them, and we find evidence for it archaeologically as well, is under an upturned pot. So if you had a ceramic pot, or a pottery pot, and turned it upside down, you can create an oven. So we were finding a certain type of sooting on a pot. The sooting at the top rather than the bottom, where it means that the pot was inverted. And we were wondering, "Why would you invert a pot?" and I tried putting some bread underneath it and putting it on a stone on a hearth and it worked. I was able to cook bread that way. I believe that that's one of the many ways that they would have done it. Also on a kind of skillet, on a stone, they would have been making flatbreads. A lot of oatcakes over here, because we had a lot of oat in the damper parts of the country.

Farrell: What's interesting about what you just said is, what you're talking about is exactly the same as a Roman clibanus, and it was a small, ceramic cloche basically that was used for baking over top of an open fire or sitting on a grille over top of embers and ashes because it creates a small, oven environment that is both hot and humid. They used clibani for a long time before the large commercial ovens came into the infrastructure. So what you're talking about is very interesting to me because it's like two independent technological advances happened that were exactly the same. It's similar to what you wrote about in your article about that twice-baked butter bread as well, when you mentioned trencher bread as well. The Romans also had trencher bread and it was called mensa. You dump all your food on top of it and it would soak up oils and the sauces and it was almost like it was a base that you could then eat afterwards or chuck it to the dogs or the slaves. It's interesting to see how different civilisations, different populations progressed in the exact same way when it comes to breadmaking.

Maeve: Yes, that's very interesting. I didn't realise that there was another name for it because I know trencher. Over here in Ireland we literally have come across two types of bread. One is called bread, and one is called paindemain. And yet, so close to us, the UK have wonderful sounding breads like manchets, rastons, girdle breads, cheat breads. Over here, I can only find bread or paindemian. Paindemain would have been very fine. That would have been a leavened bread, a very fine wheaten leavened bread that the wealthier people in society would have eaten. Do you have that type of bread that would have been 'the best'?

Farrell: Absolutely, there was a thrice-bolted panis siligeneus that was meant for the elite as well. It always struck me as odd because, yes I know it's fluffier and it's lighter and it's prettier looking – it's not as heavy – but the nutrition is actually in the bran and the germ. So the wealthy were taking the lightest and the whitest, while the poor were getting the bran and the heavier dark breads, or breads that were made out of a single bolted flour. There are similarities there again, I guess. That relates to the sensory aspects of breadmaking and it relates to the texture of the bread, the appearance of the bread. I'm pretty sure that the medieval Irish, as the ancient Romans, they probably loved a good crumb like you and I do. Probably loved having a good look at a nice, holey crumb.

Maeve: Have you come across- my strangest bread is perhaps is actually, and I forgot about this one, it's called horse bread. It's bread that was made for horses that were going to travel to take, say, the Prior of Holy Trinity in Dublin from Dublin to Drogheda which is maybe 20-30 miles. They would buy horse bread before they went on a journey.

Farrell: Was it for the horse to eat or was it for the Prior to eat?

Maeve: It was for the horse to eat but I do believe and I've read somewhere that the poorer members of society may have indeed tried eating that as well.

Farrell: Was it made out of barley, or bran?

Maeve: Mostly bran.

Farrell: Yeah, it's the same as in Rome. Marching biscuit or panis militaris. Bran bread was definitely a cast-off. Barley was mainly for animals but bran bread would again be for the slaves or the poor. It was the discard from the milling process. But once again, they understood the nutritional value of it but I guess it was strictly about texture and taste when they decided that the poor should get the rougher bran breads and the elite would have access instead to the more labour intensive white breads or the panis siligeneus.

Maeve: And what about breads that are made from pea and bean? Have you come across those?

Farrell: Yeah, there's actually one particular bread called lomentum which Pliny writes about. It's quite clever and it actually lets us know about how bread was distributed and sold because Pliny mentions that you could add bean meal to bread in order to make it heavier. So it's kind of cheeky, when you think about it. They would add bean meal into a wheat bread to make it heavier so that you could make a bigger buck off the loaf.

Maeve: In the UK there's a bread called girdle bread and I had a colleague come to me a couple of months ago to ask why he was coming up with so much remains of dried peas in a kiln, he was doing a report on it, it had been excavated. I suggested that maybe that was being turned into flour or turned into a meal that could be made into a bread. So I got some pea flour and I made some. I made these little cakes that I thought they would be like and brought them in to him to taste. They've actually become very popular, especially with some fried onion on top.

Farrell: That's fantastic, yeah I find that in recreating Roman breads, some of the ones that you would assume would be unpleasant, they're actually quite good. The unleavened breads that I've been making recently are actually quite good. The tile breads, the Herculaneum Bath Bread that I reproduced recently. They're quite good, there's nothing wrong with unleavened bread at all.

Maeve: Same here. If I do, say, a festival, we have an alumni festival every year, or I'll make oatcakes every now and then and I'll sometimes get the curd that's left over from separating the whey from the curd, and it's almost like a mild cottage cheese. You can put it on top of the oatcake and it actually tastes quite nice I think.

Farrell: I wanted to ask you, Maeve, in you experiments and in your research, what do you find difficult and what is a hurdle for you? What are you constantly trying to get past in your research or your experiments?

Maeve: Well, the lack of information is really quite frustrating so I look at the archaeobotany and the zooarchaeology reports and try and piece things together that way. Yes, the lack of information is really quite frustrating. So I look at the archaeobotany reports and I look at the zooarchaeology. So for instance, there was a community dig happening in County Meath last year and they asked me "What could they have eaten? What kind of breads might they have had?" so I looked at what they had and I looked at the cereals, I looked at the bone remains, the plant remains, and I said well, I gave a talk. I said they could have eaten all of these things, and I put up what I called the Blackfriary Feast and they invited me back to cook this feast with them and they were absolutely fascinated that with that much information they could have eaten so much and so well.

Farrell: That's fantastic. It's almost the opposite of what I'm dealing with in researching Roman breads. There is some archaeological evidence. I know that there are a lot of other forms out there but what I have to do is I have to work between the written record and the archaeological record. I have to realise that when I'm reading accounts, for example let's say Pliny versus novels or poetry written by Petronius for example, when you look at the Cena Trimalchionis, Trimalchio's Banquet, I have to realise that I cannot take that literally. I can't look at that and say, just because Archestratus said that there were these types of bread or Petronius outlines this garish, crazy banquet, doesn't

mean that that bread is in that exaggerated form. I actually have to dial things down a little bit and take the written word quite often with a huge grain of salt before I consider that it's interpreting anything accurately. I tend to lean more towards the archaeology and the artistic representations of bread as stronger types of evidence.

Maeve: That's really good, and that's something that I really can't do. I have to work out myself what it is that could be done, but I do refer a lot to British writers, Chris Woolgar, Peter Brears, people like that. Maggie Black, I don't know if she's British actually. But I have to look at what they are doing and I think that there's an argument to be made that when the Anglo-Normans came to Ireland that they possibly brought these kinds of breads with them. One of the classes I teach every now and then, I call it the the Great Medieval Bread Bake Off, which is after the Great British Bake Off just for a bit of fun. I get people to make those kind of, not from my own kind of cooking but especially from the UK model, which is very strong.

Farrell: I wonder, because bread did migrate, bread migrated with people. I wonder, are you tracing types of bread between, let's say France or Spain, Britain and Ireland, are you able to see any form of bread migration in Ireland, or is it fairly spotty as well?

Maeve: It's quite spotty. I can certainly trace French and UK breads and I will look at the Italian model because I really need to. But over here because we have nothing, it's hard to know how far to go. So that's why I'm looking at the technology of the bread ovens at the moment. I'm looking at the bread ovens in the UK and in Ireland and seeing if I can compare those, because if I can come up with something successful to say that yes, they had the same type of bread ovens in the UK as in Ireland, there would be an argument as well then for saying if they had the same type of bread ovens, did they have the same type of breads? That's just one of the things I'm doing.

Farrell: I absolutely love that aspect of this research too, is looking at the technologies and then looking at the various representations of bread in classical antiquity and seeing contact between cultures represented through it. That's one of the most beautiful ways. You know, we have amphorae, and we can look at amphorae and see how people moved around the Mediterranean simply by studying the distribution of various transport amphorae but bread acts in a similar way. If you can watch how it moved around the Mediterranean, how cultures brought it to certain places, how trade impacted the different styles of bread that were being made in different parts of the Mediterranean. It's incredible, it really is. Maeve, you were speaking about the possibility of secondary uses of ovens and something that we see in Roman domestic contexts is a lot of ovens were used not just for baking bread but also for heating the baths. So one of the studies I'm doing right now is actually looking at bread being made in bath complexes. So they were very efficient with their energy, as they were with food because everything was expensive. Everything was limited. It's not like now, grain supplies were limited and they had to make sure they used everything. They did the same with energy in their ovens as well.

Maeve: That's really good because I really believe that you wouldn't just bake bread, take it out, and let the oven cool down.

Farrell: No, because everything was costly. Everything had value, much more than it does now.

Maeve: Exactly, as well as the fuel that goes into a fire, or that goes into making one of these fires. I'm going to try doing other things in it, in the oven as well to see what would have been possible.

Farrell: In Rome, the fuel came down from the mountains and it was also imported, because Rome was obviously deforested. Ireland was also deforested upon colonization or upon European migration. Were they using peat to make bread, or were they using wood or hay? What were they using?

Maeve: One of the fuels that I'm fascinated with trying out is gorse. Do you know gorse? Firs?

Farrell: No.

Maeve: It's got a beautiful yellow flower, I think in the autumn time it has a flower. When it's dried it heats very quickly and it's very efficient. It gets to a high temperature very quickly and it burns very slowly. So that is definitely one of the things that I'm going to try. I'm just wondering if the smoke from it wouldn't provide a slightly different flavor as well. Because when you smell gorse it's got a beautiful scent.

Farrell: And that is a sensory aspect of that archaeology that would be completely lost, had we not been experimenting. The flavor of the smoke with that, for example, like the cheeses that I make. When I use fig rennet off of my trees in the back yard, it leaves a bitter undertaste to the cheese. That is completely missed when you're looking at a fresco of Roman cheese saying, "Oh, it's got cheese". It's completely missed when you don't apply phenomenological or experimental approaches to recreating artifacts.

Maeve: I agree.

Matilda: Thank you

Matilda: Thank you for that very interesting discussion. As a final, quick question, before we open up to the rest of our listeners: What are your plans for the future in your research? More specifically, how can the EXARC community help you in making a difference in regard to food and archaeology?

Maeve: Well, I want to finish writing my PhD thesis and continue to spread the word about bread. I also find it very handy to network with people, and the members of EXARC. I spoke there at the conference in Trento last year and I met some really interesting people there. It actually was because of EXARC that I think I started this journey because there was an EXARC conference at University College Dublin. I think it was in 2015. I listened to a paper by Richard Fitch from Hampton Court Palace and he was talking about recreating medieval bread and I became very interested. I started looking at if anybody had been doing anything like that in Ireland and in fact I'm the first person, I'm pretty sure I'm the first person to be doing a PhD in archaeology of food, in food - in this type of archaeology in Ireland. So that's me.
FM: As for myself, I too am doing a lot of writing. Actually I'm taking advantage of the current global situation and our lockdowns to actually catch up on my writing, because I juggle quite a fair bit throughout the year between travelling and writing. I'm taking the next couple of months to knock out my papers. As far as EXARC goes, I too- I attended an EXARC conference a few years ago in Richmond. Actually no, it was in Jamestown. Yeah, it was on the east coast in the United States and I too have felt like I found my people because I sat in a room and listened to people speak my language. People who had done the same type of in depth research and experimentation as I had and I just said to myself "Oh thank God. It's a thing. There's people doing the same thing as I am". I'm really grateful that EXARC is around. The only thing that I would do is increase an online presence, because what I try to do with my work and my research is a lot of public education, blogging, presenting, videos – to take all this all this data to the public. That's who it belongs to. I would say to keep doing what you're doing. Put the word out there, get the data out there to the public, either online so that they can access it in their living rooms and then find their own jumping off point, start their own reading processes and we'll get more people interested.

Matilda: That sounds like a very good idea. Hopefully this is a bit of a starting point for that. To make it a little more, well it's already open access, but a little bit more public, so to speak. For people who might not already be a member but might want to become a member, something like that. And that's it for the pre-recorded session

Matilda: I hope that everyone enjoyed that and we will now be having a live Q&A session for people who have been listening in to the discussion so far.
So Farrell and Maeve, you are both women, and in a particular subject which is sort of more associated with the realm of women one could say, domestic cooking, food preparation etc. How do you think your research is viewed by academia, by the public in that kind of fact?

Maeve: I'm pretty sure I'm the first archaeologist in Ireland to do a PhD involving food in this manner, in a culinary way. But my research has been very favourably met in academic terms and I've been invited to speak at academic conferences without submitting applications just for instance. People just love, want to hear about it. Yes, it has been very favourable for me. How about Farrell?

Farrell: I think my research has been received well, but I think that what's happening right now, and it is very interesting to watch this sudden interest take hold in our discipline, but also within the public arena as well. I think it's very timely, I think it's happening at a particular time. People are starting to take more interest in food in general, they are connecting with food again, chefs and home cooks are standing up and they're saying, you know what, we've had enough of feeling disconnected from our food supply, we want to go back, we want to farm, we want to garden, we want to connect with our food supply. A bit of this cross-cultural interest that's taking place both within food archaeology and then in modern food value as well, and the two of them complement each other beautifully. And then, with respect to being a women in the discipline, what interests me the most about this study is, again, ok, so we are women, researching the realm of women, food and cooking. If it's domestic it's women, if it's commercial it's men of course. What this type of archaeology does, it also shines a light on people who are generally absent in the archaeological record and that's women, slaves, freed men, liberti in the Roman archaeological records, so for me it's political as well, so it's quite a beautiful area of archaeology that needs some light shone on it.

Matilda: We also have a couple of questions from our listeners. So first we have a question from Merit Hondelink who's asking about the cereals that were used to bake bread from. So you discussed these a little bit already in your discussion, but do you happen to know more about regional preferences and also for example regarding urban vs rural regions?

Farrell: Is this for Ireland or Rome or both?

Matilda: I guess for both, if there is any some, is there is any evidence of sort of regional differentiation between different cereals that are used?

Farrell: I can speak briefly to that. Pliny tells us about where grain was sourced in ancient Rome. They sourced their grain regionally in a limited manner because they didn't have enough grain growing regionally to feed the populace, but they sourced the majority of their grain from North Africa as well as colonies in Sicily, Sardegna, particularly following the period of, following the third Macedonian war, where there was a huge economic [reform] and the urbanisation they required, grains that they began to source in the provinces and they did in regional settings. The Romans were using primarily [soft] wheat and then they were using millet as well in poor populations.

Matilda: How was the situation in Ireland then Maeve?

Maeve: In Ireland we had wheat, the predominant one was wheat, we became very good wheat growers after - I keep saying the Anglo-Normans, I know that was after they arrived in Ireland - we did become, whether it was coincidence or not I don't know, so we became really good wheat growers. Then there were oats, a little bit of rye and barley. Wheat would have been eaten by the aristocratic members of society whereas oats would have been eaten by the poor members of society.

Matilda: Which relates I guess to what you were saying earlier about the poor actually getting more of the food, so to speak, in terms of sustenance. As a follow on from that question: do either of you know whether there were any regional differences in also using sort of alternative ingredients in bread so peas or anything like that? Especially for this particular speaker, Saz, is interested in the medieval period in Ireland but also I suppose Farrell, if there's any evidence of that in Rome?

Maeve: Well, just for the medieval period in Ireland we have absolutely no evidence at all. We only know that bread was eaten. There is no description about what the bread was. We don't know, we have no, we have no recipes for bread, nothing, so I think we can go just by what's found, what evidence, archaeobotanical evidence found near, say where bread might have been excavated, and that might give a clue as to what type of cereal was used in the bread.

Matilda: Do you know what sort of things were going on in the UK, sort of in the rest of Britain at that time?

Maeve: Yes, they had very, I don't know regionally in the UK, but they certainly had very interesting breads and very different types of breads. Many many different types of breads there. Which is why I look to the UK model because I find it very informative.

Matilda: Is there any evidence of that in Rome or the Roman period I mean?

Farrell: I imagine that the Romans would be using, again, what they had on hand. If it was during times of prosperity they would have a lot of wheat, if it was during times of war or famine they would have used alternative grains, maybe even stooping so low as to use barley. Looking at the archaeological record it's difficult to look at carbonized bread and determine they're actually putting into it, but we can look at archaeobotanical evidence, such as wheat that was found in the bakery of Modestus. It was not spelt, it was wheat that was found Triticum aestivum in one of the mills. So we know that in 79-80 in Pompeii they were using wheat in this particular bakery to make bread. Then you know, leaning away from archaeology we can always look at the written record. We can look at the many sources of data like Virgil, [Levaro] or Pliny and look at the types of ingredients that they documented, and that's where it's a little bit more interesting. We're looking at bean meal, poppy seeds, [...], parsley, different types of green and then yucky stuff like gypsum and chalk in order to make the bread wider, which is...

Matilda: My god, that sounds horrendous...

Farrell: ...disturbing, it's very disturbing, but you know so they were tampering with the breads, adding strange ingredients to it to effect it aesthetically as well taste.

Matilda: Make it look good rather than taste good necessarily. This next question from Cohava relates more to the technology, the next couple of questions do actually. He asks how can you see that a bath oven was also used for bread, what kind of evidence would you find for this?

Farrell: That is actually something that I'm researching right now and I will lean heavily on my friend Cristina who is a bath expert. I have primarily done my research strictly in commercial settings, commercial bakeries, so leaning towards the domestic, where they would bathe and bake bread in the same oven or looking at a bath complex to see how it was done, and I'd be looking at any kind of joining systems where the oven would also be heating hypocauster underneath the floors, for example, or underneath the bath itself. I would be looking for connections, but now I'm in the early stages of doing that research, so I will be leaning on Cristina Hernandez quite a fair bit, if she's out there she knows that we'll be chatting about it more in the future.

Matilda: Sounds like some good potential collaboration for that then. Related to this, the next

question by Colindwren is: he says that ceramic baking cups are amazing, apparently the bread blogging community, apparently advocates using Dutch ovens for this. And he asks: how can you determine that a ceramic vessel was used for that, so for baking bread I suppose, rather than for anything else, particular sorts of evidence, can you say yes, this was definitely used for bread?

Maeve: Certainly in medieval times, I don't think there is any way of knowing why they were sitting on the top of a ceramic pot. It's a theory I don't know of any real evidence for it. It can be done and we have done it, so I can't think what else might be done in that way, but I will certainly keep an open mind about it.

Farrell: And the same would go for ancient Rome. We know that clebani were used to make bread but it was also used to make other food items as well, and again, you have to look at the clebanus as a mini oven. It creates an oven environment and any bakers who are out there know that if you were going to use a modern ceramic cloche or a Dutch oven it creates a humid hot environment to make bread in, it's almost like putting an oven inside of an oven because nowadays we do it by sticking in our conventional ovens. In ancient Rome, they'd use it more in a domestic context, or prior to an economic boom that happened around 168 BC, where commercial bakers, commercial bakeries cropped up in the infrastructure. Because then you had a mass distribution of ovens. Clebani of course would be used in domestic settings. Where in Pompeii for example 50% of people did not have baking ovens in their homes they had to use hearths. So it's basically like a small portable oven that you use, a cooktop, a hearth you can use only, or you can use the base as well.

Matilda: Just in relation to that there was just another another point that was made by another listener, Ligeri, talking about in rural France, up until the 50s apparently, the ovens were sort of used for multiple functions, so she mentions that after bread baking the temperature would slowly drop, and then depending on the temperature people would use it for other tasks, so tool sterilization or all those kind of things, so I guess, yeah, even if they are primarily for bread they can still have all sorts of other purposes or multi-functions.

Farrell: Efficient...

Matilda: Yeah exactly. So moving on, oh we have another question about sort of technology by Outdooracademic, she first of all says it's a great talk, so well done. She has an Emmer bread with sourdough and Hallstadt salt and it's in the oven apparently. I'm definitely gonna have to eat some bread after this, I'm really hungry! She was interested in learning more about baking bread on stones, and was wondering if either of you knew which stones might work best, or stones they might have used in the past perhaps as well?

Maeve: I certainly think slate is something that would have been used. I haven't done a lot of experiments on this yet, because my experiments are still- a lot of them are to come, but I do believe that slate would have been, it has been found certainly in the base of some bread ovens that have been excavated and I think it would have been a good one. Off hand right now, being far away from my research I can not think of anything else right now.

Matilda: That's the problem with being in isolation.

Farrell: As for me, my experience is only with basalt oven floors and then ceramic bases where the tops have [...] in platforms.

Matilda: So the next question is from Rick Sowden asking about the point that you made Farrell where Romans would add, Roman bakers would add in extra ingredients to make the bread look better, but not necessarily taste better. Apparently the same was done in Victorian Britain, but then

legislation was made to ban some of them. Do you know if there were any prohibitions in Rome relating to this kind of thing?

Farrell: Not as of yet, no, I haven't seen anything related to prohibitions. I do think it's an interesting subject though because look at some of the dangerous practices that took place in Victorian England. There is more and more recent practices that took place in New York City for example, during the turn of the century, a lot of people populating lower Manhattan, there is a museum there, called the Tenement Museum, where they discuss how chalk also used to be added to milk to extend milk, and it was very dangerous, it made a lot of people sick. Now the Romans knew for example that lead was poisonous, but they still used lead pots to make defrutum. I don't recall seeing anything but I haven't come across it yet, that said, "alright everybody, stop using lead pots for making your defrutum!". So I would say that regulations were probably a little bit looser, than safety regulations were much looser, than they are in the modern day.

Matilda: I imagine probably a little bit more...So in moving away a bit from technology now - we'll probably come back to it - I see from the next couple of questions, Caroline Jeffra would like to know no if either you have a favourite reconstructed bread recipe, and I do know that both of both of you a lot of kind of experimental baking, so to speak, and you have any that you're willing to share now or do you have them online somewhere, and what makes them special to you?

Maeve: I have a lovely one, it's from the UK again, I think it's called Raston (https://dublininquirer.com/2019/10/02/how-to-make-buttery-twice-baked-r...), where you bake a bread and you cut off the top, and it's a leavened bread, take out the crumb and you mix it with clarified butter, and you put it back into the bread, and put the lid back on the bread again and bake it again, and it's quite delicious. That's certainly one that I would recommend. There are others as well, I mean, I'm a great I'm a sourdough baker and I believe that, cause the leaven is a natural one, I believe that that would have been around in ancient times as well, and so probably my favourite bread I bake right now myself is a good sourdough, I love it and I put all kinds of things into it from nowadays from chili flakes to anything that's well flavoured. Adooka is another one, but I don't think they're were doing that, putting in the flavourings in medieval times. What about you, Farrell?

Farrell: There is a myriad of bread recipes on my side that people can try and it will satisfy people that are interested in working with different forms and bread as a symbol of something, or, bread that incorporates a lot of weird and wonderful ingredients that we don't use in our modern breads. Off the top of my head the most favourite one that I have and the one that I make the most often for my family and the ones that go over the best in my workshops, is a little thing called Grape Must cakes (https://tavolamediterranea.com/2018/09/22/baking-bread-romans-part-v-gr...). If of course you prefer to make without yeast, there's other documentation of these breads being made with yeast and they are a knockout, they're just amazing, it incorporates sweet and savoury. You've got grapes, you have cheese like fresh ricotta or freshly made cheese with cumin, you've got this huge beautiful combination of flavours that, when you bake them, they blow up into these lovely little biscuits. They're almost, they're crunchy because of the sugar is coming off the grapes and it contains no water at all, it's all just grapes [...]. You can knock back about 10 in one sitting, they're really good.

Matilda: I suppose to get the real proper, old time flavour you have to add a bit of chalk in as well?

Farrell: Yes, yeah, just for that extra grit in your teeth yeah.

Matilda: Ok, we have another question here from Merit, who is curious about the location of the communal ovens in Ireland, although maybe they also had communal ovens sort of in the Roman kind of regions. Would these ovens be positioned in a certain part of the settlements, so in the

centre, on the edge, near the mill, assuming that people sort of mill the flour or did not mill the flower themselves?

Maeve: I don't know the answer to that fully but I can tell you that some of them, some outdoor ovens were built against a wall, I mean, the reason for an outdoor oven is safety as much as anything else. They might have been leaning against a wall, the ones that I'm most interested in are completely on their own, so I need to look to see- they would have been part of a settlement but I can't exactly trace if they were in the centre and houses all around them. They would have been part of a community but I don't think there's any particular layout of, say, housing close by. I think perhaps they would have been just as part of a settlement rather than in a particular place. I hope that answers the question but the ones against walls obviously we've found those sometimes if there is a tower house or a small castle, there might be evidence of some against a wall which will probably be across from where the kitchen is in that area, so that the cook or the baker would have gone out to use the bread oven outdoors there.

Matilda: Were there sort of communal ovens in the Roman regions?

Farrell: So with respect to this question is an example, it is generally accepted and understood that, before exant commercial bakeries at Pompeii were communal, there is a handful of them though that were domestic but were producing commercially - we know this by the amount of mills that were present in these homes - but a large amount of these commercial bakeries at Rome, at Pompeii and Herculaneum were considered communal, because we can follow, we can look at stamps, determine that, so the one, panus Quadratus, that was found at Herculaneum that was stamped a slave's name, is the property of a certain slave who worked for a certain person. That tells us that the bread that was being baked meant to be collected and taken back to this particular house. Then you know we can also see stamps that were regarded as branding or just a decoration for example. Definitely at Pompeii when you consider once again that 50% of people that lived there did not have cooking facilities, which is why they ate out a lot in various bars or taberna, would have also possibly have their bread made in these communal bakeries and then they would collect it and take it back home.

Matilda: It's an efficient way of getting your bread.

Maeve: Yes, I've just been reminded, we had bakeries as well, none of which survived, but there were bakeries there. It would have been the baker himself who would have had a mark, and it was just for quality purposes and the baker had to identify what bread he baked. But they would have been in very few cities but they were certainly bakeries in Dublin City for instance and I would say in perhaps Waterford or Cork as well.

Matilda: So our next question here is from Jenny Loader, talking about flatbreads now. Is there any evidence in either of your regions for baking flatbreads on the outside of pottery kilns? Is this even possible? I don't know if this is something you've tried in your experiments?

Maeve: I've certainly heard about this. There is no evidence that I have come across, but I've certainly heard about it and it's something I want to try, actually I want to try on the outside of my bread oven when it's up and running. I'm going to try and bake flatbreads on the outside of it. I'm just going to try to doing everything with that oven. I'll be experimenting for, hopefully if I get back to it for the whole summer, but certainly one of the things I want to test is how hot it is outside and whether anything could have been done on the outside of the oven, on the outside of the clay when it heats up. I had a smaller one in University College Dublin, a little bread oven some years ago, and I didn't try to do anything with it but it got nice and warm on the outside. Next time I will, next time I talk about this I will be able to tell you whether you could cook anything on the outside of a bread oven or a kiln. I'm not sure about kilns, but certainly I will be able to talk about bread ovens.

Farrell: I myself have never come across evidence of bread being made on the outside of the kiln.

Matilda: That will be something for someone to try. One of these lovely experimental archaeologists who have joined us today. Make a nice pottery kiln and when you're done make yourself a flatbread. Give yourself a bit of a treat. Moving on to the next question by Pascale Barnes, our chair of EXARC. She asks if the majority of leavened breads in Rome were of a sourdough type, someone mentioned sourdough earlier.

Farrell: It's a really interesting question and something I've been playing around with for quite a number of years. We get hung up on sourdough quite a fair bit because Pliny writes about it. When you're thinking about bread making on a grand scale, on a commercial scale, think about the ovens at Pompeii for example which are about 5m cubed, area of the oven floor, think about the high volume of bread that can be output in commercial settings in ancient Rome. The idea of inoculating that much bread dough really is problematic, because you're thinking about inoculating a lot of bread dough and any home baker and any professional baker knows that it takes quite a fair bit of time for sourdough to chew away at the fresh dough to create a leavened product. What I've been doing recently, having talks with some friends in Rome who are also in the same racket as I am, Cristina and Georgio back in Rome, is considering the dough might have actually been rested. You can ferment dough naturally by leaving it sit in a warm humid environment or just out at the counter, out on the fridge for example, which of course they would not have in ancient Rome of course, but if you leave it sit in the in the open-air it can ferment naturally for a period of the day or two and you will create a leavened product. It makes more sense to me that they actually made massive amounts of dough and then shoved it off to the side and let it sit. It makes more sense to me, it’s more efficient than trying to inoculate the dough with a starter. But they may have done it as well but a starter is essentially just old dough, it’s fermented dough and that you keep on adding, you continually to pay it forward into the next batch in order to ferment fresh dough.

Matilda: That seems very relevant for now because I know that all of the people who are self-isolating at home at the moment seem to be going crazy for sourdough. So it seems to be a popular thing to be trying out at the moment.

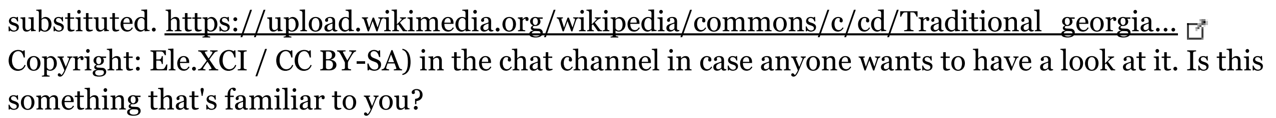
Farrell: It's one of the reasons why I put out that video recently to tell people not to panic. You don’t need to have a sourdough, you don't need to to toil away of making a sourdough. You can just leave your dough on the counter for 48 hours and you will have a leavened product.

Maeve: I was going to say that we're having dreadful problems getting strong flour anyway, it's very hard to buy strong flour nowadays with this lockdown, so I do make sourdough but I've been making it for quite a long time it's not just a recent covid virus sourdough.

Matilda: That sounds good, there is actually some good, nice feedback here from David Freeman who says he’s cooked a lot of breads in different constructs and also suggests dipping into beer froth instead of your yeast.

Maeve: Yes that is right, barm, the top of the beer would have been used as a leaven.

Matilda: Sounds very interesting. David also mentions that he has cooked bread in some constructs of British Iron Age ovens, with and without a container, with and without a fire left in the oven. He's cooked flatbreads on coals and on stones, and he finds that sedimentary rock tends to crack, igneous works well, especially when sourced from the seashore or the river where they've been ground down and rounded, so thank you David for that feedback, that was very helpful. We also had a question from Marc Cox who is asking about the Georgian ‘tomme’ ovens, I’m not sure how to say that. He’s put a little photo (The original image shared is subject to copyright, so a comparable image has been



substituted. https://upload.wikimedia.org/wikipedia/commons/c/cd/Traditional_georgia... Copyright: Ele.XCI / CC BY-SA) in the chat channel in case anyone wants to have a look at it. Is this something that's familiar to you?

Maeve: I would be very interested in having a look at it and giving an opinion, I'm just not great with technology.

Farrell: Unless it's ancient...

Matilda: Well bread ovens, yes, computers... Speaking of ... Ligeri has a quick question, she is interested in prehistoric archaeology, they were wondering if you'd have any information about the origins of bread. So she mentions that bread dates back to the Neolithic in the Near East. Are there any archaeological traces that you might know of, sort of in the early stages, I know that this is a little bit out of your specialised regions and time periods but if you know anything about it?

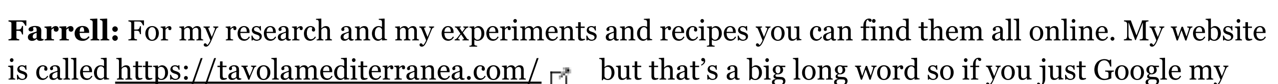
Farrell: There was a recent study that was published last summer or the summer before, that was coming out of Jordan where a Natufian hearth was discovered, and there was archaeobotanical remains of what they believe to be bread crumbs, but this would be about 14,000 years BPa I think, 14,000 years ago. They believe that they found early forms of flatbreads, cakes being made on a hearth.

Matilda: It's been a part of life for a long long time. I have one more quick question and then we'll see if anyone writes one more question in the next minute or two, and then we'll finish up for the day. So experimental archaeology usually requires collaboration with specialists. I know the work I do I have to work with prehistoric technology experts, but of course with cooking we're either of you heavily involved in cooking or in food before you became experimental archaeologists? Do you think this is a requirement for anyone wanting to get into this kind of research?

Farrell: Yes, I'm very much a foody, very much a home cook, I'm also married into a large Italian family so cooking is a big part of our home life. I don't think it's a prerequisite though, I think that anybody that is curious, creative, studious, can get involved in this type of thing. I think you have to have a general interest in cooking technologies, be curious about food production, procurement, agriculture. You don't have to have the background but I think it does help really when you can feed people in your family the products in the experiments.

Maeve: For me, I'm the same, I'm a huge foodie, food is- I think about it so much and I read any cookbook that's put in my way, I'm always trying different recipes and I have two daughters who are exactly the same. I worked in a cookery school for a while, testing and developing recipes. That was because I really just love doing it and so for me it was always about food, and I approached my supervisor in University College Dublin to say that I wanted to do experimental archaeology of food. I was very worried that it hadn't been done before so yes. So to answer the other part of the question: no, you don't have to have any special- I think once you have the interest, once you really just want to do it, I think that's really all you need.

Matilda: That's very good to know, and I mean like you say food is, both of you just mentioned, food is such a good thing to be specialised in, because there's always going to be someone around to help you eat off your experiments, and do some taste tests I'm sure. I think that's it for today, a quick question before I wrap up. Where can people find out what you are both doing? I know that a couple of people have shown an interest in reconstructed bread recipes or other sorts of recipes. Where can they find information about this?



Farrell: For my research and my experiments and recipes you can find them all online. My website is called https://tavolamediterranea.com/ but that's a big long word so if you just Google my

name Farrell Monaco, you'll be able to find interviews, recipes as well as events and workshops, that are delayed this year naturally, because of what's going on right now, but I hope that by the fall or the winter there will be more museum presentations and hands-on workshops taking place, because I really enjoy actually meeting people face-to-face and baking together and discussing history and the research together as we make bread.

Maeve: I don't have a website, I'm still finishing off my PhD. The only recipes for bread that I would have published would have been in the Dublin Inquirer (https://dublininquirer.com/contributors/maeve-l-estrange), but if anybody wanted to get in touch with me, feel free and I could certainly get some recipes together, because the recipes that I teach to students in UCD I have those somewhere in my laptop.

Matilda: Sounds good and there seem to be a couple, David De Clerq just suggested also there is an Iron Age forum, Kelticos (https://www.kelticos.org page has gone offline), which has a lot of recipes for bread, if people want to check that out that sounds good. Thank you very much both Maeve and Farrell for joining us and sharing your experience and expertise, I know I certainly learned a lot about bread and I'm sure our listeners did too, so thank you both very very much.

Farrell: Thank you and thanks to everybody for joining in today.

Maeve: Same for me thank you very much, it's been a pleasure getting to know you and getting to know Farrell and I just know Farrell and I will be in touch with each other again.

Farrell: Indeed, I'm so happy that we actually got to chat in this forum finally.

Maeve: Me too.

Matilda: Hopefully, this is the start of many collaborations.

Maeve: Thank you EXARC, thank you for the opportunity.

Matilda: Thank you everyone else, thank you for listening to this episode of #FinallyFriday by EXARC. If you would like to become more involved with EXARC and you're not a member already, why not become a member? We're great, we're really friendly. I recently became a member and it's fantastic. Alternatively you can also make a small PayPal donation through the EXARC website, to help support EXARC in its endeavours. See you next month for another episode of #FinallyFriday, bye everyone!